

Remarks

Claims 1-7, 28 and 31-38 are pending in the application. Claims 1, 28 and 36-38 have been amended. New independent claim 39 has been added. No new matter has been added; support for claim 39 is found in claims 1, 4 and in Table 1, line 5; see Rejections under 35 USC § 112, first paragraph.

Arguments in this response are made with reference to the claims as amended hereby.

Rejections under 35 USC § 112, first paragraph

Claims 1-7, 28, 31-35 and 37-38 stand rejected under 35 USC 112, first paragraph, as failing to comply with the written description requirement for including the following subject matter: "wherein 2.0 to 20 wt.%, based upon total coating material, of the monofunctional, difunctional, trifunctional and polyfunctional (meth)acrylate compounds are linear or branched."

Independent Claims 1 and 28

Claims 1 and 28 have been amended to recite:

wherein 2.0 to 9.7 wt.%, based upon total coating material, of the at least one low molecular weight (meth)acrylate is selected from difunctional, trifunctional and polyfunctional (meth)acrylate compounds.

Support for "the at least one low molecular weight (meth)acrylate is selected from difunctional, trifunctional and polyfunctional (meth)acrylate compounds" is found in original claim 1:

b. 5 to 60 wt. % of **at least one low molecular weight (meth)acrylate selected from the group consisting of monofunctional, difunctional, trifunctional and polyfunctional (meth)acrylate compounds;**

and in the specification at paragraph 18:

[0018] The coating material is also to contain at least one mono-, di-, tri- or polyfunctional unsaturated low-molecular (meth)acrylate, with separate compounds or mixtures possibly being present.

Support for the amount range of "2.0 to 9.7 wt.%, based on total coating material," is found the Examples, which are part of the description of the invention.

Table 1 of the Examples describes compositions and their amounts in parts by weight, which are readily converted to weight percent by one of skill in the art. As shown in the table below, Examples 6, 8 and 9 support the lower limit of "2.0" and Example 5 provides support for the upper limit of "9.7" of the amount of (meth)acrylate compounds having more than one functional group as follows:

Total Parts by weight	130.0	130.0	105.0	115.0	103.0	100.0	105.0	100.0	100.0
Example/RawMaterial	1	2	3	4	5	6	7	8	9
1 Aliphatic epoxy acrylate	61.9	-	-	-	-	-	-	-	-
2 Aliphatic hexa-functional urethane acrylate M_w 1000	-	56.9	56.9	56.9	-	34.0	56.9	31.5	31.6
3 Aromatic epoxy diacrylate M_w 460	-	-	-	-	80.8	37.0	-	34.3	34.5
4 Isobornyl acrylate	30.6	35.1	35.1	35.1	-	21.1	35.1	19.4	19.5
5 Neopentyl glycol propoxylate diacrylate	20.0	20.0	-	-	10.0	2.1	-	2.0	2.0
6 Vinyltrimethoxy-silane	-	-	5.0	15.0	-	-	5.0	-	-
7 Bis(gamma-trimethoxysilylpropyl)amine	10.0	10.0	-	-	4.2	1.0	-	0.9	0.8
8 Acid triacrylate (acid value 150)	2.5	3.0	3.0	3.0	-	1.8	3.0	1.7	1.7
9 Phosphoric acid acrylate (acid value 300)		-	-	-	3.0	-	-	2.8	2.8
10 Photoinitiator	5.0	5.0	5.0	5.0	5.0	3.0	4.5	4.6	4.7
11 Commercial biocide	-	-	-	-	-	-	0.5	-	-
12 Hydrophobic silica	-	-	-	-	-	-	-	2.8	-
13 Nanoparticulate Al_2O_3									2.4

Example 1 is 15.4%, Example 2 is 15.4%, Example 5 is 9.7%, Example 6 is 2.1%, Example 8 is 2.0% and Example 9 is 2.1%.

Dependent Claims 37 and 38

Dependent claims 37 and 38 have been amended to depend from independent claim 36 thereby obviating this rejection with respect to claim 27. Dependent claim 38 has been amended in a manner similar to claims 1 and 28, and the foregoing arguments regarding support for amendments to the independent claims are hereby incorporated with reference to claim 38.

Independent Claim 39

New claim 39 has been added reciting:

wherein 2.0 to 15.4 wt.%, based upon total coating material, of the at least one low molecular weight (meth)acrylate is selected from difunctional, trifunctional and polyfunctional (meth)acrylate compounds.

Support for the amount range of “2.0 to 15.4 wt.%, based on total coating material,” is found in Examples 1, 2, 5, 6, 8 and 9, which are part of the description of the invention. Examples 6, 8 and 9 support the lower limit of “2.0” and Examples 1 and 2 support the upper limit of “15.4”

As discussed above, support for “the at least one low molecular weight (meth)acrylate is selected from difunctional, trifunctional and polyfunctional (meth)acrylate compounds” is found in original claim 1 and in the specification at paragraph 18.

A specification may describe an actual reduction to practice by showing that the inventor constructed an embodiment or performed a process that met all the limitations of the claim and determined that the invention would work for its intended purpose.

Cooper v. Goldfarb, 154 F.3d 1321, 1327, 47 USPQ2d 1896, 1901 (Fed. Cir. 1998).

Appellants herein made embodiments that meet all the limitations of claims 1, 28, and 36-39 and applied the coatings of Examples 1, 2, 5, 6, 8 and 9. The test results from Table 2 of the specification show that the embodiments and process work for their intended purposes.

That Applicants herein had possession of the invention of claims 1-7, 28, 31-35

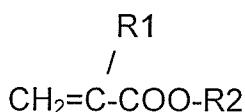
and 37-39 is conclusively shown in the instant patent application by Examples 1, 2, 5, 6, 8 and 9. Each are individual reductions to practice of embodiments of the invention, which show that the invention claimed was indeed in Applicants' hands. The rejections under 35 USC §112, first paragraph should be withdrawn.

Rejections under 35 USC § 112, second paragraph

Claim 36 was rejected under 35 USC §112, second paragraph as being indefinite. The claim has been amended to clarify what is claimed, support for the amendment is found at paragraph 17 and in Example 5 of the original specification. It is respectfully submitted that the amended claim satisfies 35 USC §112, second paragraph. It is requested that the rejection be withdrawn.

Rejections under 35 USC § 102

Claims 1-3 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Shustack (US 5,128,391). Applicants respectfully traverse the rejection. Independent claim 1, and the claims dependent thereon, recite "wherein 2.0 to 9.7 wt.%, based upon total coating material, of the at least one low molecular weight (meth)acrylate is selected from difunctional, trifunctional and polyfunctional (meth)acrylate compounds." This feature is neither taught nor suggested by the '391 or the '387 references, which are directed to higher amounts of monomer of "15 to about 75 percent by weight", Shustack (US 5,128,391), Col. 4, line 33, and Shustack (US 5,128,387), Col. 4, line 8. Neither of these references teach or suggest that a selected amount of the monomer must be "difunctional, trifunctional and polyfunctional (meth)acrylate compounds." Both Shustack references teach cyclic, monofunctional monomer reciting the formula:



wherein R1 is selected from the group consisting of H and CH₃, and wherein R2 is a

cyclic or multicyclic group selected from the group consisting of isobornyl, dicyclopentenyl, dicyclopentenyl oxyethyl, cyclohexyl, 3,3,5-trimethyl cyclohexyl, phenyl, benzyl, naphthyl, substituted derivatives thereof and mixtures thereof.

As the Office is no doubt aware, a rejection under 35 U.S.C. §102 can only be maintained if single reference teaches each and every element of the claims. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985).

There is no teaching of a (meth)acrylate monomer in either Shustack reference that anticipates Applicants' claims 1-3 and 5; the rejection should be withdrawn.

Rejections under 35 USC § 103

Claim 4 is rejected under 35 U.S.C. §103(a) as being unpatentable over Shustack (US 5,128,391) in view of Shustack (US 5,128,387). The Examiner has stated:

Applicants argue that the prior art of Shustack et al. are silent on "at least one (meth)acrylate compound containing one or more acidic groups" and that Shustack et al. teach away from the claimed invention because Shustack et al. (col. 2, line 17-36) would cause undesirable effect, such as premature gelling. However, the examiner disagrees, because applicants' cited teaching is related to the background or the related art of the disclosed invention. Such background teaching does not constitute as negative teachings of the applicants' instantly claimed invention because Shustack et al (col. 7, line 52-68) clearly indicate that when acid functional group containing compound is used, Novacure 3800 (an initiator) should be used to avoid the incompatibility issues dealing with the neutralization of the acid group containing compound with an amine group containing initiation system.

The Examiner's attention is directed to the following passage from Shustack (US 5,128,391), Col. 10, lines 51-62, which is part of the Description of the Preferred Embodiments:

The organofunctional silane adhesion promoters of this invention are particularly advantageous inasmuch as they allow the incorporation of these amine coinitiators in the composition. Unlike the acidic adhesion promoters disclosed in the Shustack application U.S. Ser. No. 134,975, filed Dec. 18, 1987, particular non-acidic silanes can be chosen such that, if it is desired to use an amine

coinitiator, there is a reduced tendency for the chosen non-acidic silanes to react with the amine, thus rendering the adhesion promoter ineffective and possibly compromising formation stability through premature gelling. (emphasis added).

As such, the '391 reference unambiguously teaches away from use of acidic components as incorporating them risks "compromising formation stability through premature gelling".

In the "Response to Arguments" of the Official Action dated February 2, 2007, the Examiner agreed that "Novacure 800" is an epoxy acrylate oligomer, not an initiator. Applicants submit that it is Novacure 3800 to which the Examiner referred, since Novacure 800 does not appear to be found in the references.

Applicant submits that in view of the nature of Novacure 3800, the Examiner's argument that "Shustack et al (col. 7, line 52-68) clearly indicate that when acid functional group containing compound is used, Novacure 3800 (an initiator) should be used to avoid the incompatibility issues dealing with the neutralization of the acid group containing compound with an amine group containing initiation system" should be withdrawn, as should the rejection of claim 4.

Applicants respectfully submit that the Shustack references do not clearly indicate that when acid functional group containing compound is used, Novacure 3800 (an initiator) should be used to avoid the incompatibility issues. First, Novacure 3800 is an epoxy acrylate oligomer, it is not an initiator. Second, claim 1 specifically recites epoxy (meth)acrylate oligomers as part of component "a" and separately recites "at least one (meth)acrylate compound different from a and b containing one or more acidic groups" that is part of component "c".

Shustack (US 5,128,391) is an improvement over the prior Shustack reference ('387) and substitutes the organofunctional silane adhesion promoter for acidic adhesion promoters, due to problems with compromising formation stability through premature gelling. One of skill in the art reading the '391 reference would understand that other acidic components could also cause gelling and would be led away from

using them. Seeking to combine the two Shustack references is improper where doing so destroys the '391's teachings. The '391 specifically teaches that acidic compositions are not to be used because they react with the amine groups. The '387 is being relied upon by the Examiner to teach adding the very chemicals that the '391 teaches are to be avoided. As such, the combination of these references would destroy the '391 and thus cannot be used to support a rejection under 35 USC §103.

Claim 6 is rejected under 35 U.S.C. §103(a) as being unpatentable over Shustack (US 5,128,391) in view of Razavi (US 5,629,365). Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shustack (US 5,128,391) in view of Nagasawa et al. (US 4,205,018). The arguments for patentability of claims 6 and 7 found in Applicants' prior responses are incorporated herein by reference. Based on these arguments and the patentability of the independent claims, the rejection of claims 6 and 7 under 35 USC §103 should be withdrawn.

Claim 28 is rejected under 35 U.S.C. §103(a) as being unpatentable over Shustack (US 5,128,391). Claim 28 has been amended to recite "2.0 to 9.7 wt.%, based upon total coating material, of the at least one low molecular weight (meth)acrylate is selected from difunctional, trifunctional and polyfunctional (meth)acrylate compounds. For the reasons recited above regarding patentability of claim 1 over the references, Applicants submit that there is no teaching or suggestion in the '391 alone that would motivate one of skill in the art to modify the reference in an attempt to achieve Applicants' claim 28. The rejection should be withdrawn.

Claims 31-35 and 37-38 were rejected under 35 U.S.C. §103(a) as being unpatentable over Shustack (US 5,128,391). The Examiner stated: "Claim 28, 31-35, 37-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shustack (US Pat. 5,128,391) for reasons adequately set forth from paragraph 10 of non-final office of April 28, 2005."

Clarification or withdrawal of the rejection of claims 31-35 and 37-38 under 35 U.S.C. §103(a) is hereby requested where the relied upon paragraph contains no

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reasons for rejection, but instead is an acknowledgement of a foreign priority claim and demand for a certified copy, which has since been provided.

Conclusion

Applicants request reconsideration in view of the remarks contained herein. Applicants submit that the claims are in condition for allowance and a notice to that effect is respectfully requested. Should the Examiner have any questions regarding this paper, please contact the undersigned

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